

REMARKS

In the last Office Action, the Examiner rejected claims 8-14 under 35 U.S.C. §112, second paragraph, for indefiniteness. Claims 1-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,595,122 to Brediceanu in view of U.S. Patent Publication No. 2003/0167908 to Nishitani et al. ("Nishitani").

In accordance with the present response, the specification has been suitably revised to correct informalities, provide antecedent basis for the claim language, and bring it into better conformance with U.S. practice. Independent claim 1 has been amended to incorporate the subject matter of claims 4-5, which have been cancelled, and to further patentably distinguish from the prior art of record. Claims 8-14 have been amended to overcome the rejection under 35 U.S.C. §112, second paragraph. Original claims 1-3 and 6-14 have also been amended in formal respects to improve the wording and bring them into better conformance with U.S. practice. New claims 15-20 have been added to provide a fuller scope of coverage. The title of the invention has been changed to "SYNCHRONIZED BEAT NOTIFICATION SYSTEM AND MASTER DEVICE AND SLAVE DEVICE FOR USE THEREWITH" to more clearly reflect the invention to which the amended and new claims are directed. A new, more descriptive abstract has been substituted for the original abstract.

In view of the foregoing, applicant respectfully submits that the rejection of claims 8-14 under 35 U.S.C. §112, second paragraph, has been overcome and should be withdrawn.

Applicant requests reconsideration of his application in light of the foregoing amendments and the following discussion.

Brief Summary of Invention

The present invention is directed to a synchronized beat notification system and to a master device and slave device for use therewith.

The specification (pages 1-4) discloses a conventional beat notification system (i.e., a metronome). A problem with the conventional beat notification system is that it has not been able to perform simultaneous notification of beats indicated by a conductor in an arbitrary manner through a plurality of users on land or in water. Furthermore, the procedure for establishing communication between various users of the conventional beat notification system requires a cumbersome and intricate identification system which degrades the efficiency of the beat notification system.

The present invention overcomes the drawbacks of the conventional art. Figs. 1-4 show an embodiment of a

synchronized beat notification system for providing beat notifications (e.g., by a conductor) to a plurality of users (e.g., an ensemble, a marching band or synchronized swimmers) participating in synchronization with a common rhythm. The synchronized beat notification system has a master device having a beat input unit 101 to which a user (e.g., a conductor) inputs a beat with arbitrary timing, a master radio communication unit 102 for transmitting as radio information the beat inputted to the beat input unit 101 together with identification information corresponding to information identifying the master device, and a master housing 103 containing therein the beat input unit 101 and the master radio communication unit 102.

A slave device has a slave radio communication unit 104 for receiving the radio information transmitted from the master radio communication unit 102 of the master device, a beat notification unit 105 for performing notification of the beat inputted to the beat input unit 101 of the master device in accordance with the information received by the slave radio communication unit 104, and a slave housing 106 containing therein the slave radio communication unit 104 and the beat notification unit 105. The slave radio communication unit 104 extracts from the received radio information the identification information corresponding to the master device

and controls the beat notification unit 105 to perform beat notification only when the extracted identification information coincides with identification information on a master device intended to become a communication partner with the slave device.

By the foregoing construction, the synchronized beat notification system according to the present invention allows simultaneous notification of beats at an arbitrary tempo which are indicated by a conductor, for example, to a plurality of users (e.g., participating in land or in water) in an efficient manner.

Moreover, the synchronized beat notification system according to the present invention provides a master device with a master radio communication unit which transmits as radio information the beat inputted to the beat input unit together with identification information corresponding to information identifying the master device, and a slave device with a slave radio communication unit which extracts from the received radio information the identification information corresponding to the master device and controls the beat notification unit to perform beat notification only when the extracted identification information coincides with identification information on a master device intended to become a communication partner with the slave device. By this

construction, a more efficient identification system is achieved for establishing communication between a slave device and an intended master device for beat notification as compared to the conventional art.

**Traversal of Prior Art Rejection**

Claims 1-3 and 6-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brediceanu in view of Nishitani. Applicant respectfully traverses this rejection and submits that the combined teachings of Brediceanu and Nishitani do not disclose or suggest the subject matter recited in amended claims 1-3 and 6-14.

Amended independent claim 1 is directed to a synchronized beat notification system for providing beat notifications to a plurality of users participating in synchronization with a common rhythm. Claim 1 requires a master device comprised of a beat input unit to which a user inputs a beat with arbitrary timing, a master radio communication unit for transmitting as radio information the beat inputted to the beat input unit together with identification information corresponding to information identifying the master device, and a master housing containing therein the beat input unit and the master radio communication unit. Claim 1 further requires a slave device comprised of a

slave radio communication unit for receiving the radio information transmitted from the master radio communication unit of the master device, a beat notification unit for performing notification of the beat inputted to the beat input unit of the master device in accordance with the information received by the slave radio communication unit, and a slave housing containing therein the slave radio communication unit and the beat notification unit. Claim 1 further requires that the slave radio communication unit extracts from the received radio information the identification information corresponding to the master device and controls the beat notification unit to perform beat notification only when the extracted identification information coincides with identification information on a master device intended to become a communication partner with the slave device. No corresponding structural and functional combination is disclosed or suggested by the prior art of record.

The primary reference to Brediceanu discloses a tempo system used in an orchestra for providing respective tempo signals to a plurality of performer groups. A master device (i.e., transmitter) 28 transmits respective tempo signals at different frequencies to respective performer groups via slave devices (i.e., transmitters) 13.

Thus in Brediceanu communication between the slave devices and the master device is achieved via preselected frequencies assigned to the respective slave devices. The reliance on different frequencies to achieve communication (i.e., transmit tempo signals) between the master and slave devices requires a complicated structure for the tempo system and limits the number of performer groups which can communicate with the master device due to the requirement for frequency clearance and the limitations on the number of available frequencies.

As recognized by the Examiner, Brediceanu does not disclose or suggest a master device having a beat input unit to which a user inputs a beat, as recited in independent claim 1.

Moreover, Brediceanu does not disclose or suggest the specific structure and corresponding functions of the master and slave devices recited in amended independent claim 1. More specifically, amended independent claim 1 requires a master device having a master radio communication unit for transmitting as radio information the beat inputted to the beat input unit together with identification information corresponding to information identifying the master device, and a slave device having a slave radio communication unit for extracting from the transmitted radio information the

identification information corresponding to the master device and controlling the beat notification unit to perform beat notification only when the extracted identification information coincides with identification information on a master device intended to become a communication partner with the slave device. Stated otherwise, amended claim 1 requires that the identification information corresponding to the master device is transmitted, as radio information, together with the beat inputted to the beat input unit, and that the slave radio communication unit of the slave device extracts the identification information from the transmitted radio information only when such identification information coincides with identification information on a master device intended to become a communication partner with the slave device. By this construction, the synchronized beat notification system recited in amended claim 1 does not rely on the use of different frequencies for transmitting beat notifications from the master device to the slave device(s) as required by the tempo system disclosed by Brediceanu.

The Examiner cited the secondary reference to Nishitani for its disclosure of a performance system having a beat input unit. However, Nishitani's performance system is not concerned with the notification of beat information to participating users. In Nishitani's performance system, an

apparatus (e.g., a baton-type sensor) held by a performer detects motion of the performer and transmits the results of the motion detection to a main system having a tone generator section causing the tone generator to control tone generation in accordance with the results of motion detection. Thus by Nishitani's performance system, anyone who does not have a skill for performing musical instruments can take part in a music performance through simple operations such as by moving his/her body.

Moreover, Nishitani does not disclose or suggest the structural combination of the synchronized beat notification system recited in amended independent claim 1, including the structure and corresponding functions of the master and slave devices.

Since Nishitani does not disclose or suggest the foregoing structural and functional features, it does not cure the deficiencies of Brediceanu. Accordingly, one ordinarily skilled in the art would not have been led to modify the references to attain the claimed subject matter.

Claims 2-3 and 6-14 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from the references at least in the same manner as amended claim 1.

In view of the foregoing, applicant respectfully requests that the rejection of claims 1-3 and 6-14 under 35 U.S.C. §103(a) as being unpatentable over Brediceanu in view of Nishitani be withdrawn.

Applicant respectfully submits that new claims 15-20 also patentably distinguish from the prior art of record.

New independent claim 15 is directed to a master device for a synchronized beat notification system for providing synchronized beat notification through slave devices to a plurality of users having the respective slave devices and participating in synchronization with a common rhythm. Claim 15 requires a beat input unit to which a user inputs a beat with arbitrary timing, a master radio communication unit for transmitting, as radio information, to the slave devices the beat inputted to the beat input unit together with identification information corresponding to information identifying the master device, and a master housing containing therein the beat input unit and the master radio communication unit. No corresponding structural and functional combination is disclosed or suggested by the prior art of record as set forth above for amended independent claim 1.

New independent claim 17 is directed to a system of slave devices for providing synchronized beat notification transmitted by a master device to a plurality of users having

the respective slave devices and participating in synchronization with a common rhythm. Claim 17 requires a slave radio communication unit for receiving information corresponding to the synchronized beat notification transmitted by the master device and including identification information corresponding to information identifying the master device, a beat notification unit for performing notification of a beat to the user in accordance with the synchronized beat notification received by the slave radio communication unit, the slave radio communication unit extracting the identification information from the received information and controlling the beat notification unit to perform beat notification only when the extracted identification information coincides with identification information on a master device intended to become a communication partner with the slave device, and a slave housing containing therein the slave radio communication unit and the beat notification unit. No corresponding structural and functional combination is disclosed or suggested by the prior art of record as set forth above for amended independent claim 1.

New independent claim 19 is directed to a synchronized beat notification system for providing beat notifications to a plurality of users participating in

synchronization with a common rhythm. Claim 19 requires a plurality of master devices each comprised of a beat input unit to which a user inputs a beat with arbitrary timing, a master radio communication unit for transmitting as radio information the beat inputted to the beat input unit together with identification information corresponding to information identifying the master device, and a master housing containing therein the beat input unit and the master radio communication unit. Claim 19 further requires a plurality of slave devices each comprised of a slave radio communication unit for receiving the radio information transmitted from the master radio communication unit of at least one of the master devices, a beat notification unit for performing notification of the beat inputted to the beat input unit of the master device in accordance with the information received by the slave radio communication unit, and a slave housing containing therein the slave radio communication unit and the beat notification unit, the slave radio communication unit extracting from the received radio information the identification information corresponding to the master device and controlling the beat notification unit to perform beat notification only when the extracted identification information coincides with identification information on one of the master devices intended to become a communication partner with the slave device.

The prior art of record does not disclose or suggest the subject matter recited in new independent claim 19. For example, Brediceanu relates to a tempo system used in an orchestra for providing respective tempo signals to a plurality of performer groups. Thus, there can only be one master device (conductor) in Brediceanu, and there is no necessity for a plurality of master devices as recited in claim 19. Brediceanu also does not disclose or suggest the structure and corresponding functions of the master radio communication unit of each of the master devices and the slave radio communication unit of each of the slave devices relating to the handling of identification information corresponding to the master devices, as set forth above for amended independent claim 1.

Nishitani also does not disclose or suggest the structural combination of the synchronized beat notification system recited in claim 19. While Nishitani's performance system has a plurality of apparatuses (corresponding to master devices) for detecting motions of a performer, the performance system has only one main system (corresponding to a slave device). In Nishitani's performance system, the main system receives, aggregates and analyzes the results of the motion detection to control tone generation. Thus there is no necessity of providing a plurality of main systems in Nishitani's performance system.

Claims 16, 18 and 20 depend on and contain all of the limitations of new dependent claims 15, 17 and 19, respectively, and, therefore, distinguish from the prior art of record at least in the same manner as claims 15, 17 and 19.

In view of the foregoing amendments and discussions, the application is now believed to be in allowable form. Accordingly, favorable reconsideration and passage of the application to issue are most respectfully requested.

Respectfully submitted,

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September 28, 2005

Date